



Intelligent and Trustworthy Networks: AI-Driven Evolution Toward Autonomous, Secure, and Sustainable Systems

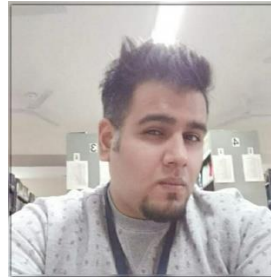
SESSION ORGANIZERS:



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SESSION DESCRIPTION:

The rapid convergence of Artificial Intelligence (AI), Machine Learning (ML), and advanced communication technologies has revolutionized the design and operation of intelligent networks and systems. This session aims to bring together researchers, academicians, and industry experts to discuss cutting-edge methodologies and frameworks that enhance network intelligence, adaptability, resilience, and security. As modern communication environments evolve ranging from 5G/6G networks and edge computing infrastructures to the Internet of Things (IoT) and smart city ecosystems, there is a growing need for intelligent, secure, and energy-efficient architectures. This session emphasizes innovations in AI-based network optimization, adaptive management, privacy-preserving learning techniques, and sustainable communication strategies. Participants will explore interdisciplinary approaches that integrate AI, blockchain, federated learning, quantum communication, and advanced cryptographic methods to create self-managing, robust, and trustworthy networking systems. The session particularly welcomes contributions that demonstrate practical implementations, simulations, and real-world deployments of intelligent and autonomous network systems capable of responding dynamically to complex challenges such as latency, heterogeneity, scalability, and security threats.

RECOMMENDED TOPICS:

Topics to be discussed in this special session include (but are not limited to) the following:

- AI and Machine Learning for Network Optimization
- Deep Reinforcement Learning for Dynamic Resource Management
- Autonomous and Adaptive Network Management Systems
- Intelligent Traffic Control and Load Balancing in Networks
- IoT and Edge Network Architectures: Design, Optimization, and Security
- Modeling and Simulation of Intelligent Communication Systems
- Integration of AI, Blockchain, and Edge Computing for Smart Networks
- Cognitive Radio Networks and Intelligent Spectrum Management
- Cybersecurity Frameworks for Adaptive and Intelligent Networks
- Digital Twin Models for Network Prediction and Optimization



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- Trust, Privacy, and Security in IoT and Smart Networks
- Blockchain-Enabled Network Security and Data Integrity
- Energy-Efficient and Sustainable Networking Solutions
- Quantum Networking and Secure Communication Protocols
- Resilient and Self-Healing Network Architectures
- Privacy-Preserving and Federated Learning in Communication Networks
- AI-Driven Fault Detection and Recovery in Network Systems
- Smart Cities and Connected Systems: Challenges and Emerging Solutions
- Software-Defined Networking (SDN) and Network Function Virtualization (NFV) for Intelligent Systems
- Adaptive Routing Protocols for Heterogeneous Network Environments
- Multi-Agent Systems for Collaborative Network Decision-Making
- Explainable AI (XAI) in Network Decision Processes
- 6G-Ready Intelligent Communication Architectures
- Edge-Cloud Orchestration and Distributed Intelligence in Networks
- Predictive Analytics for Proactive Network Management

IMPORTANT DATES

For Dates,

Refer <https://iccs2025.iaasse.org/call-for-papers.html#imp-dates>

SUBMISSION GUIDELINES

To know more about **paper format and other submission guidelines**, pls visit the following link of SN LNNS:

[Computer Science proceedings LaTeX2e package](#)

[Computer Science proceedings Word](#)

[templates Computer Science](#)

[proceedings instructions for authors](#)

SUBMISSION PROCESS

Researchers and practitioners are invited to submit papers for this special theme session, **Intelligent and Trustworthy Networks: AI-Driven Evolution Toward Autonomous, Secure, and Sustainable Systems**. All submissions must be original and may not be reviewed by another publication.

Submission Link – Refer https://meteor.springer.com/ICCS_2025

All submitted papers will be reviewed on a double-masked, peer-review basis.

REGISTRATION:

For Details,

Refer <https://iccs2025.iaasse.org/register.html>

ICCS-2025

11th International Conference on Cyber Security Privacy in Communication Networks

Hybrid Mode (In-Person & Virtual)

December 08 – 09, 2025

***** CALL FOR PAPERS *****

(<https://iccs2025.iaasse.org/call-for-papers.html>)

SPECIAL SESSION

**Intelligent and Trustworthy Networks: AI-Driven Evolution Toward
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